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Jang H A[1], Park J Y[1], Seo J M[2], Che J H[3], Lee J G[1]

1. *Korea university hospital, department of urology, Seoul, Korea,* ***2.*** *Seoul National University, Department of electrical engineering, Seoul, Korea,* ***3.*** *Seoul national university hospital, Clinical research institute, Seoul, Korea*

MEASUREMENT OF THE THICKNESS OF THE URETHROVAGINAL SPACE IN WOMEN WITH MIXED URINARY INCONTINENCE; A PRELIMINARY STUDY

Hypothesis / aims of study

We have reported that women with stress-predominant mixed urinary incontinence(MUI) and without detrusor overactivity(DO) or with low pressure detrusor overactivity(LPDO) are more likely to be cured of their urge urinary incontinence after a midurethral sling(MUS) operation for treating mixed urinary incontinence. Few studies are available on the role of female anatomical variety such as female urethral length and anterior vaginal wall thickness in stress urinary incontinence or sexual activity. The aim of this study was to evaluate the usefulness of characterization of female urethral length(UL) and anterior vaginal wall thickness(AVWT) in women with MUI through transvaginal ultrasound.

Study design, materials and methods

The prospective data was collected for 27 women with MUI and who underwent a MUS operation. Patients with significant cystocele, pelvic floor prolapse or with history of previous pelvic surgery, psycho-neurologic diseases were excluded. Twenty-three women with MUI underwent transvaginal ultrasound with use of a 7.5MHz transrectal probe. The subjects were divided into 2 groups according to the presence of detrusor overactivity(DO) by preoperative urodynamic study. Clinical and urodynamic parameters such as AVWT, Q-tip, the grade of SUI, the presence of ISD were compared between the two groups. The Mann Whitney U test were performed for statistical analysis, and the Spearman correlation coefficient for correlation.

	Detrusor overactivity	Mann Whitney	Spearman

Results

Of 27 women, 13 patents had DO(48.1%), 14 did not(51.9%). The women's median age was 57.04 years and there were no significant differences in the age or symptom duration between the two groups. The AVWT (mm, mean±SD) was significantly shorter (0.45±0.07 vs 0.59±0.11, respectively, p= 0.001) and the Q-tip was significantly lower (36.54±10.88 vs 47.5±12.05, respectively, p= 0.022) in women with DO than in women without DO. There were no significant differences in the AVWT, the grade of SUI and urgency between the two groups. A significant negative correlation (correlation coefficient: -0.647) was found between AVWT and DO ($p<0.001$), and DO showed intermediate negative correlation (correlation coefficient: -0.450) with Q-tip ($p=0.018$).

Interpretation of results

In this preliminary study, the AVWT was significantly shorter and the Q-tip was significantly lower in women with DO than in women without DO.

Concluding message

It suggest that women with shorter AVWT and lower Q-tip are likely to have DO. A large-scale prospective study is needed.

Table 1. Comparative demographic and clinical data of mixed incontinent women according to the presence or absence of detrusor overactivity by preoperative urodynamic study.

parameter	Present (n=13)	Absent (n=14)	U test	correlation coefficient
age	57.46±12.25	56.64±9.94	0.827	
Symptom duartion	5.5±5.71	5.23±4.30	0.736	
vaginal delivery	2.92±1.12	2.43±0.94	0.222	
Urethro-vaginal space thickness (cm)	0.45±0.07	0.59±0.11	**0.001***	**-0.647**
urethral length (cm)	4.03±1.08	4.13±1.03	0.574	
SUI grade	1.46±0.52	1.57±0.65	0.720	
Q tip	36.54±10.88	47.5±12.05	**0.022***	**-0.450**
Voiding (Number/day)	9.38±3.07	9.57±3.67	0.981	
Urge incontinence (Number/day)	3.08±4.33	2.79±4.30	0.740	
Urgency (Number/day)	3.08±4.65	2.93±4.80	0.873	
ISD	0.54±0.52	0.71±0.47	0.354	
VLPP	63.46±23.19	82.57±24.66	0.099	
MUCP	43.08±17.44	57.29±27.85	0.114	
FUL	32.71±5.61	34.88±10.67	0.680	
PdetQmax	18.31±8.46	19.93±11.07	0.808	
Pdetmax	29.92±13.61	32.14±18.17	0.846	
Qmax	14.08±4.09	17.5±6.55	0.144	
VV	209.08±47.05	227.64±62.31	0.297	
RV	16.08±31.95	14.29±21.36	0.883	

References

1. Preoperative Factors Predicting the Outcome of a Midurethal Sling Operation for Treating Women with Mixed Incontinence, Jae Jun Kim, Jae Hyun Bae, Jeong Gu Lee, The Korean Urology association 2008 ;49(12): 1112-1118

Specify source of funding or grant	**This work was financially supported by the grant from the Industrial Source Technology Development Program (10033634) of the Ministry of Knowledge Economy(MKE) of Korea.**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
Is this a Randomised Controlled Trial (RCT)?	**Yes**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**it was a retrospective study**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**